AmeriGas Autogas

Chris Ransom

PROPANE EDUCATION & RESEARCH COUNCIL

What is AutoGas ?

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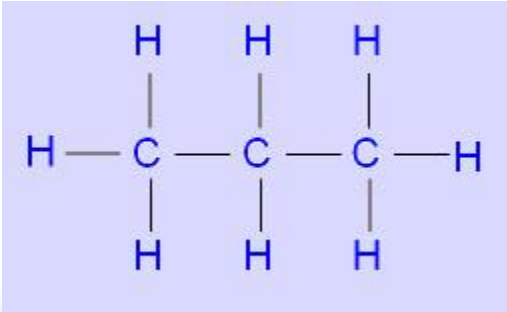
America's Propane Company
NATIONAL ACCOUNTS

PROPANE



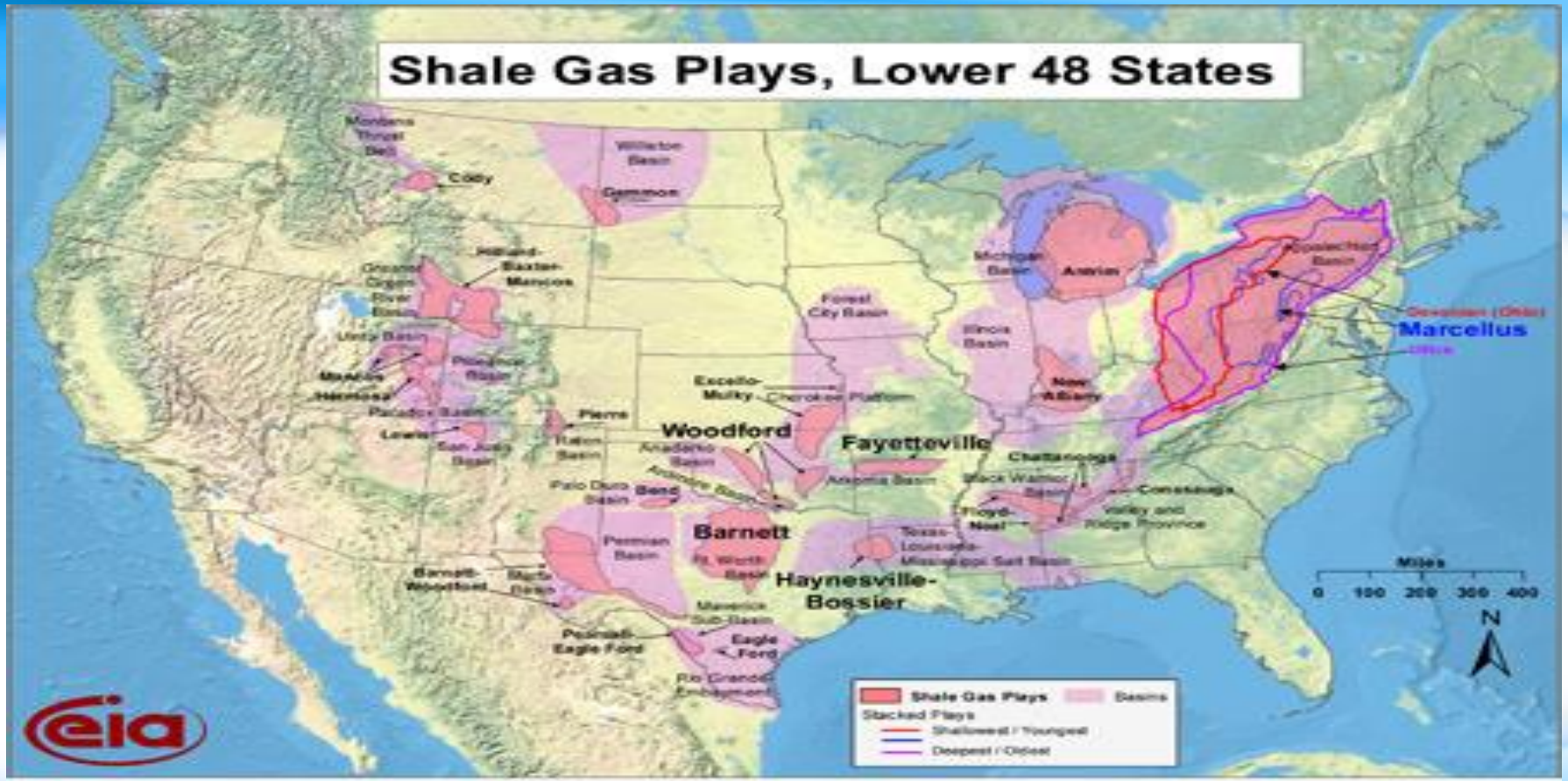
Propane Autogas as an Alternative Motor Fuel

~300,000 propane vehicles in US

~15M propane vehicles worldwide

Referred to as “AutoGas”

The US continues to increase its use of propane AutoGas for on road applications



Source: Energy Information Administration based on data from various published studies.
Updated: March 10, 2010

Power Shift

- Natural gas to surpass coal in U.S. power generation in 2016
- By BOB DOWNING Published: March 16, 2016
- From the U.S. Energy Information Administration today

Why choose AutoGas?

- Safe
- Supply Chain
- Economical
- Environmental
- Domestic

Safety

- Storage tanks
- Emergency valves
- Risk of ignition compared to gasoline
- AutoGas tanks 20x stronger than gas

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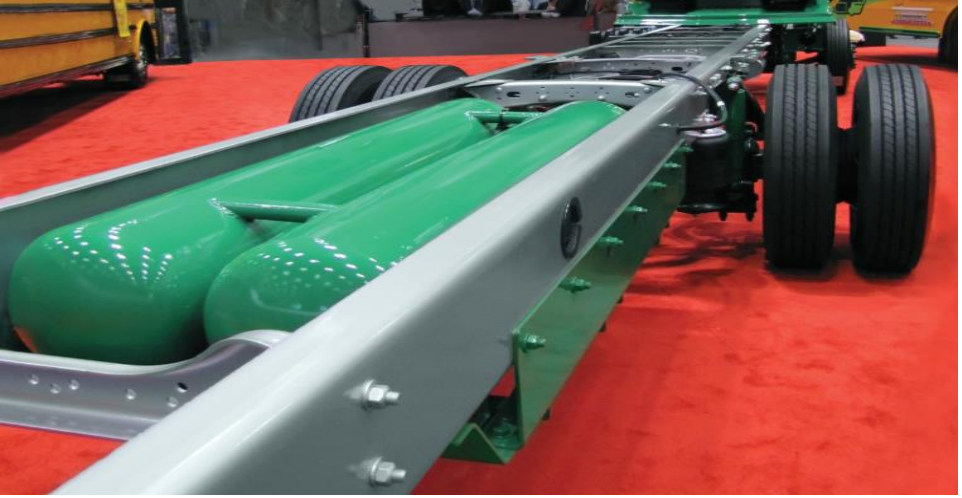
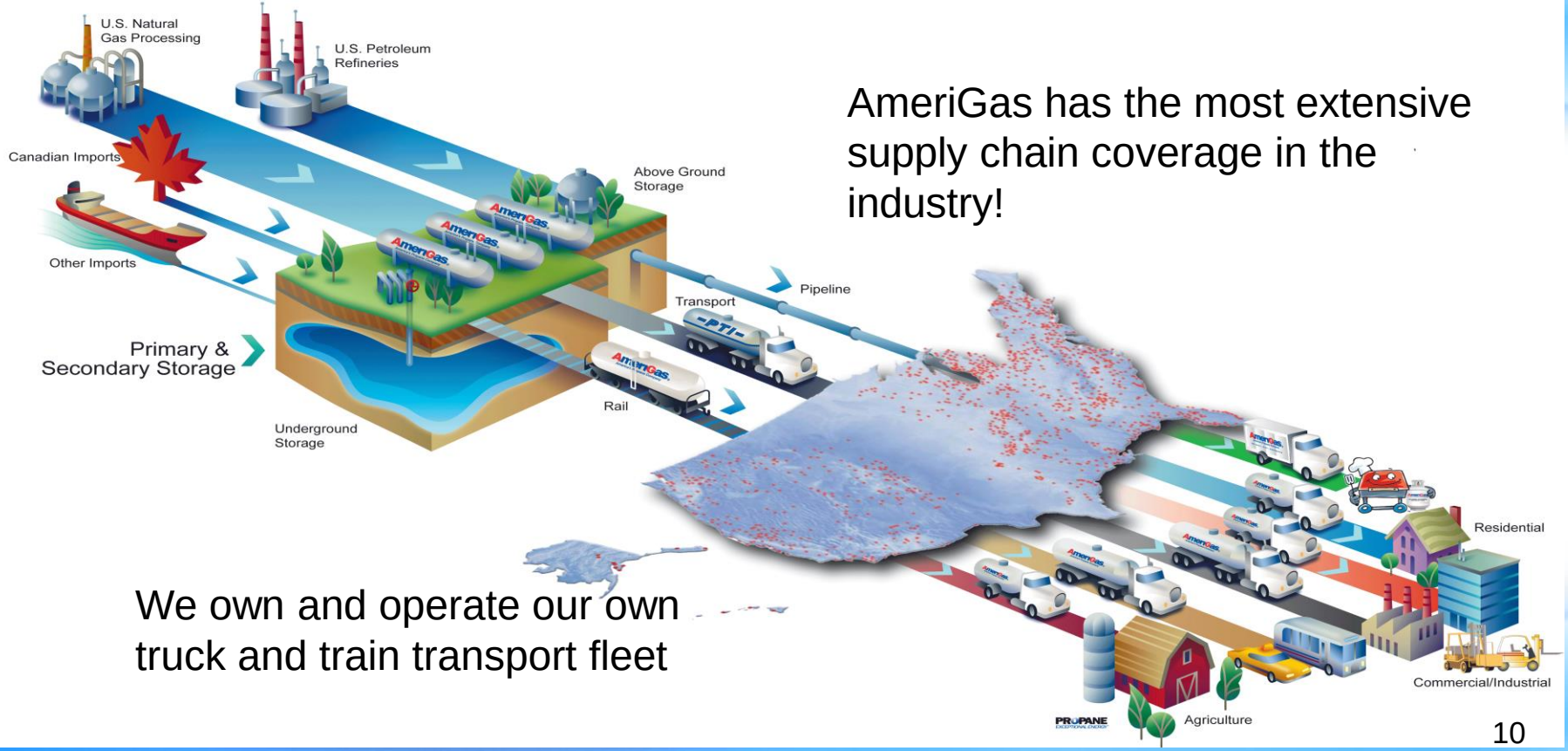


Built-in safety devices and automatic shut-off valves

Propane tanks are 20 times more puncture-resistant than gasoline tanks

AmeriGas AutoGas

Unmatched Supply Chain



AmeriGas has the most extensive supply chain coverage in the industry!

We own and operate our own truck and train transport fleet

National Account Customers

Propane School Buses

Types of Autogas Vehicles and Users

Public Sector Fleets

Government Entities

Transit

Schools

Private Sector Fleets

Taxis

Landscape Contractors

Hotel, Hospital, Airport Shuttle Buses

Delivery Companies

Nestle Waters NA

Alternative Fuels - Best Fit For NWNA

Fuel Type	Vehicle Cost	OEM Class 7 Availability	OEM Class 5 Availability	Fuel CPG	Infrastructure	PM & NOx
Diesel	✓	✓	✓	✗	✓	✓
Electric Hybrid	✗	✗	✗	✗	✗	✓
CNG	✗	✗	✓	✓	✗	✓
Propane	✓	✗	✓	✓	✓	✓

Although propane is not available in class 7 today, it is developing faster than CNG

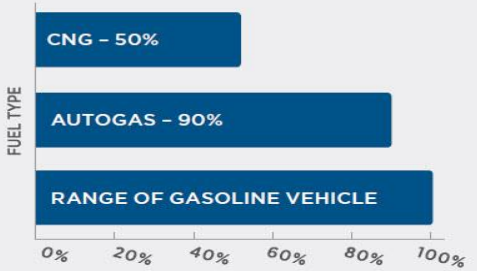
AUTOGAS VEHICLES ARE LESS EXPENSIVE AND GET BETTER RANGE

YOU CAN CONVERT

2 LIGHT-DUTY **AUTOGAS** VEHICLES **FOR THE PRICE OF CONVERTING** **1** LIGHT-DUTY VEHICLE **TO CNG**

An average CNG vehicle conversion costs $15,000. An average autogas conversion costs $8,000.

COMPARE VEHICLE RANGE BY FUEL



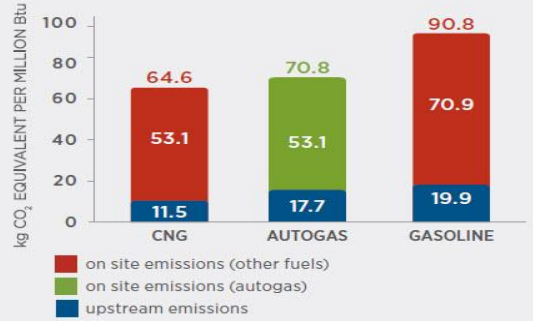
AUTOGAS REDUCES MORE HARMFUL EMISSIONS PER DOLLAR INVESTED

PER DOLLAR INVESTED

AUTOGAS VEHICLES OFFSET **1.5X** **THE HARMFUL EMISSIONS** **THAT CNG VEHICLES OFFSET**

Compared to gasoline, both autogas and CNG vehicles reduce harmful emissions by more than 20%. But per dollar spent, more autogas vehicles can be deployed, thereby offsetting more harmful emissions.

COMPARE CARBON EMISSIONS



Autogas FOR America

www.autogasforamerica.org

Sources include US Department of Energy, US Energy Information Administration and various third-party studies. For more information, data, charts and detailed source information, visit http://autogasforamerica.org/Fact_Brief.pdf

Infrastructure

Propane Autogas vs. Natural Gas

A brief comparison of implementation costs and environmental impact

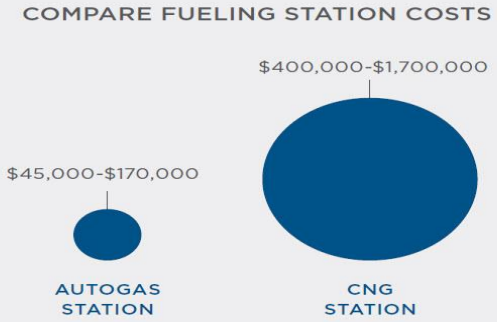
Both autogas and compressed natural gas (CNG) are American-made, abundant and less expensive than gasoline. But every dollar invested in autogas goes further for our environment and our energy security.

AUTOGAS FUELING STATIONS ARE LESS EXPENSIVE

YOU CAN BUILD

15 AUTOGAS FUELING STATIONS **FOR THE PRICE OF** **1** CNG FUELING STATION

One CNG fueling station costs between $400,000 and $1,700,000.
A comparable autogas station costs between $45,000 and $175,000.



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Broward County Schools

Broward County Public Schools **Student** Transportation and Fleet Services Department reduced its annual operating costs by over $600,000 through the use of school buses fueled by propane AutoGas.

The sixth largest school system in the nation, BCPS operates 1,269 school buses, including the 98 fueled by propane AutoGas.

“The fuel and maintenance savings from our buses using propane AutoGas has allowed us to reduce our expenses for transporting students to and from school.”

The district paid an average of $1.32 per gallon for propane and $2.75 for diesel over the last year. In addition to fuel savings, annual maintenance costs for the alternatively fueled buses amounted to 80 percent less than for their diesel buses. Propane AutoGas reduces maintenance costs due to the fuel’s clean-burning properties.

BCPS expects to save more than $74,000 in operating costs over the 12-year lifecycle of each propane autogas bus, which equates to a 38 cents per mile savings.

BCPS budgeted for a six-month return on investment of the initial propane engine upcharge, but succeeded in recouping that cost in three months.

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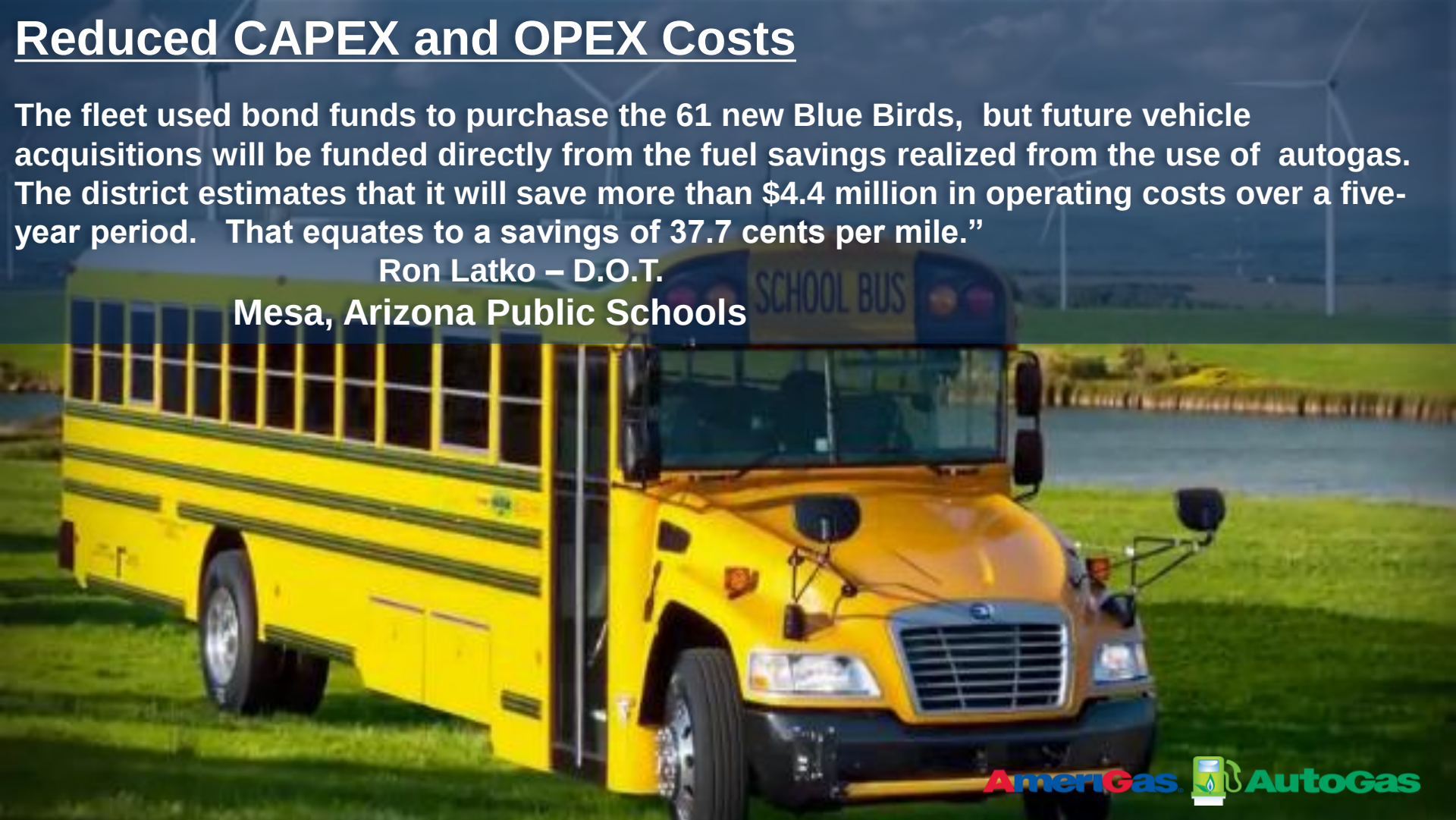
Reduced CAPEX and OPEX Costs

The fleet used bond funds to purchase the 61 new Blue Birds, but future vehicle acquisitions will be funded directly from the fuel savings realized from the use of autogas. The district estimates that it will save more than $4.4 million in operating costs over a five-year period. That equates to a savings of 37.7 cents per mile."

Ron Latko – D.O.T.

Mesa, Arizona Public Schools



ConocoPhillips

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Fleet Users

- Autogas station installed on-site at fleet base
- Spill-free dispenser with familiar design
- Fully scalable to serve fleets of all sizes
- Works well with fuel management systems
- All necessary training for fleet personnel

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Dispenser vs AutoGas Refueling Station

AutoGas Refueling Station

(2) 1990 Fueling Station

Simple/Complex


STRAIGHT TALK
HOW PROPANE AUTOGAS IS
MAKING A DIFFERENCE FOR FLEETS

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THANK YOU!

Always there. amerigas.com